



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/500,942	06/18/2012	Jean-Marc Marechal	338180-00523	7191

35161 7590 11/30/2016  
DICKINSON WRIGHT PLLC  
1825 Eye St., NW  
Suite 900  
WASHINGTON, DC 20006

EXAMINER
----------

PENG, KUO LIANG

ART UNIT	PAPER NUMBER
----------	--------------

1765

MAIL DATE	DELIVERY MODE
-----------	---------------

11/30/2016

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

*Ex parte* JEAN-MARC MARECHAL, STEPHANIE De LANDTSHEER,  
and JEAN-MICHEL FAVROT

---

Appeal 2015-008152  
Application 13/500,942  
Technology Center 1700

---

Before BEVERLY A. FRANKLIN, LINDA M. GAUDETTE, and  
MONTÉ T. SQUIRE, *Administrative Patent Judges*.

FRANKLIN, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants request our review under 35 U.S.C. § 134 of the Examiner's decision rejecting claims 1–14 and 16. We have jurisdiction over the appeal under 35 U.S.C. § 6(b).

### STATEMENT OF THE CASE

Claim 1 is illustrative of Appellants' subject matter on appeal and is set forth below (with text in bold for emphasis):

1. A diene elastomer, wherein:
  - from 75% to 95% by weight of the diene elastomer is monofunctional **and carries, at just one chain end, a silanol functional group or a polysiloxane block having a silanol end, the other end being devoid of any functionalization, and**
  - from 5% to 25% by weight of the diene elastomer is coupled by **or star-branched by tin.**

The Examiner relies on the following prior art references as evidence of unpatentability:

Takeichi	US 6,228,908 B1	May 8, 2001
Nicolin	WO 2009/077839 A1	June 28, 2009

### THE REJECTIONS

1. Claims 1–14 are rejected under 35 U.S.C. § 103(a) as obvious over Nicolin.
2. Claim 16 under 35 U.S.C. § 103(a) as obvious over Nicolin in view of Takeichi.

### ANALYSIS

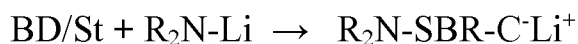
It is the Examiner's position, *inter alia*, that Nicolin discloses the presence of a non-functional anionic initiator for the reasons stated on pages

4–7 of the Answer. As such, the Examiner states that the living chain end of the main chain can be partially star-branched with  $\text{SnCl}_4$  or  $\text{SiCl}_4$  to afford a mixture of linear and radical chains. Ans. 4. Nicolin, p. 8, ll. 3–9. The Examiner states that the extent of star-branching is not disclosed in Nicolin, but that such is a result effective variable and therefore obvious. Ans. 4.

Appellants dispute the aforementioned interpretation of Nicolin. Appeal Br. 13. Reply Br. 2–3. Appellants state that the disclosure of Nicolin at page 8, lines 6–9 does not include mixture with another elastomer (contrary to the Examiner’s interpretation) when this disclosure is considered within the context of the synthesis of a D3 functionalized elastomer, which is the objective of Nicolin. Reply Br. 2–3. Appellants explain:

[t]his objective, as explained by Nicolin at page 5, lines 6-13, is to provide an S-SBR-type elastomer “functionalized at the extremity.” The functionalization considered by Nicolin is not merely the silanol functionality, but also include[s] the various functional groups described on pages 7-8, including an amine group, such as those structures given at page 7, line 13. Nicolin discloses that such functionalization may occur at both extremities of a linear chain by the additional use of a functionalized terminator at page 17, lines 17-23. The introduction of an amine functional group can be made by using a functional initiator, such as lithium amides, as is known in the art. Nicolin explicitly considers only alky lithium initiators, particularly at page 16 thereof, because Nicolin focuses on functionalization with D3. The alkyl lithium initiators are those normally employed in the art. However, this does not exclude the use of functionalized initiators as mentioned at page 17. The resulting active functionalized chains may then be further functionalized by any functionalizing agent known to react with living polymers, including coupling or starring agents, such as  $\text{SiCl}_4$  or  $\text{SnCl}_4$ . The reaction schemes are shown below:

Random copolymerization:



Termination:



The  $(\text{R}_2\text{N-SBR})_4\text{M}$  elastomer having radial polymeric chains is in accordance with the objectives of Nicolin, because it is an SBR-type elastomer that is functionalized at the extremity. This is the type of elastomer to which Nicolin refers in the disclosure at page 8, lines 6-9.

Reply Br. 3–4.

Appellants explain that it is not possible to obtain this type of structure when a silanol functionalization is used instead of an amine functionalization. Reply Br. 4. Appellants submit that the quotation at page 8, lines 6–9 of Nicolin would therefore be understood by one skilled in the art as referring to elastomers functionalized at the extremity with radial polymeric chains, or even a mixture of linear and radial chains in order to satisfy the objectives of Nicolin. Appellants state that Nicolin specifies that this is to occur in “appropriate conditions,” which are that the end functionalized elastomer is still reactive relative to further coupling agents. As a result, Appellants submit that Nicolin cannot be fairly read as disclosing a mixture of elastomers functionalized at the extremity and elastomers not functionalized at the extremity. Appellants submit that to assert otherwise requires the Office to interpose its own judgment as to what one of ordinary skill in the art would understand while disregarding the context provided by Nicolin with respect to the disclosed objectives thereof.

We are persuaded by Appellants' stated position in the record. *See Baltimore & Ohio R. Co. v. Aberdeen & Rockfish R. Co.*, 393 U.S. 87, 91–92 (1968) (requiring administrative agencies to rely on “substantial evidence and reasoned findings” rather than their own technical expertise).

In view of the above, we reverse Rejection 1. We also reverse Rejection 2 because the Examiner does not rely upon the additional applied reference of Rejection 2 to cure the stated deficiencies of Nicolin.

DECISION

Each rejection is reversed.

ORDER

REVERSED